

WHAT IS CLAIMED IS:

1. A method of allocating system capacity to a plurality of terminals in a communication switching system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the method comprising:

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

2. The method according to Claim 1, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

3. The method according to Claim 1, further comprising:

configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

4. The method according to Claim 1, further comprising:

receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal.

5. The method according to Claim 4, wherein the bandwidth request message specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

6. The method according to Claim 1, wherein the communication switching system is a satellite network.

7. The method according to Claim 6, wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocating steps.

8. The method according to Claim 4, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, the method further comprising:

storing the bandwidth request message in one of the queues.

9. The method according to Claim 8, further comprising:

maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

10. The method according to Claim 9, wherein the sub-partitions within each of the partitions are equal in quantity, the method further comprising:

reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

11. A communication switching system comprising:

a plurality of terminals configured to request allocations of capacity of the system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools; and

a control computer communicating with the plurality of terminals and being configured to allocate the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals, the control computer selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal, and selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

12. The system according to Claim 11, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

13. The system according to Claim 11, wherein the partition and sub-partitions of the capacity are based upon a prescribed time-of-day profile.

14. The system according to Claim 11, wherein the terminals are configured to transmit a bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal.

15. The system according to Claim 14, wherein the bandwidth request messages specify pool identifications (IDs) corresponding to the partitions of the provisioned portion of the capacity.

16. The system according to Claim 11, wherein the communication switching system is a satellite network.

17. The system according to Claim 15, wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocations.

18. The system according to Claim 15, further comprising:  
a plurality of queues corresponding to the partitions and sub-partitions in the provisioned portion, the bandwidth request message being stored in one of the queues.

19. The system according to Claim 15, wherein the control computer maintains an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

20. The system according to Claim 19, wherein the sub-partitions within each of the partitions are equal in quantity, the control computer reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

21. A computer-readable medium carrying one or more sequences of one or more instructions for allocating system capacity to a plurality of terminals in a communication switching system, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

22. The computer readable medium according to Claim 21, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

23. The computer readable medium according to Claim 21, wherein the one or more processors further perform the step of:

configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

24. The computer readable medium according to Claim 21, wherein the one or more processors further perform the step of:

receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal.

25. The computer readable medium according to Claim 24, wherein the bandwidth request message in the receiving step specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

26. The computer readable medium according to Claim 21, wherein the communication switching system is a satellite network.

27. The computer readable medium according to Claim 26, wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocating steps.

28. The computer readable medium according to Claim 25, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, and the one or more processors further perform the step of:

storing the bandwidth request message in one of the queues.

29. The computer readable medium according to Claim 28, wherein the one or more processors further perform the step of:

maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

30. The computer readable medium according to Claim 29, wherein the sub-partitions within each of the partitions are equal in quantity, the one or more processors further performing the step of:

reinstating a displaced bandwidth request by manipulating pointers associated with the queues.

31. A communication switching system for allocating system capacity to a plurality of terminals, the capacity being partitioned into a provisioned portion and an unprovisioned portion, a portion of the terminals constituting a pool having a plurality of sub-pools, the system comprising:

means for allocating the provisioned portion of the capacity to the plurality of sub-pools of the terminals, the provisioned portion of the capacity being arranged into sub-partitions, wherein one of the sub-partitions is not associated with the sub-pools of terminals, and remaining sub-partitions are associated with the sub-pools of terminals;

means for selectively allocating available capacity from the sub-partitions to one of the sub-pool terminals to permit overflow of traffic from the one sub-pool terminal; and

means for selectively allocating the unprovisioned portion of the capacity to the pool to permit overflow of traffic from a terminal within the pool and to a terminal that is not a part of the pool of terminals.

32. The system according to Claim 31, wherein the partitions and sub-partitions of the capacity specify a maximum transmission rate for the corresponding terminals.

33. The system according to Claim 31, further comprising:

means for configuring the partition and sub-partitions of the capacity based upon a prescribed time-of-day profile.

34. The system according to Claim 31, further comprising:

means for receiving a bandwidth request message from one of the terminals, the one terminal being configured to submit the bandwidth request message that selectively requests capacity from the provisioned portion and the unprovisioned portion based upon a type of traffic received by the one terminal.

35. The system according to Claim 34, wherein the bandwidth request message specifies a pool identification (ID) corresponding to one of the partitions of the provisioned portion of the capacity.

36. The system according to Claim 31, wherein the communication switching system is a satellite network.

37. The system according to Claim 32, wherein each of the terminals is configured to receive high volume traffic and to transmit the traffic to a satellite of the satellite network in response to at least one of the allocations.

38. The system according to Claim 5, wherein the partitions and sub-partitions in the provisioned portion have corresponding queues, the system further comprising:

means for storing the bandwidth request message in one of the queues.

39. The system according to Claim 38, further comprising:

means for maintaining an uplink table that contains uplink threshold values, and a downlink table that contains downlink threshold values for each of the queues that correspond to the pools.

40. The system according to Claim 39, wherein the sub-partitions within each of the partitions are equal in quantity, the system further comprising:

means for reinstating a displaced bandwidth request by manipulating pointers associated with the queues.